U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

TO: Janet Feldstein, Project Manager,
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From: Thor Cutler, Coastal Resources Coordinator, NOAA

RE: Scientific Chemical Processing Site Review,NOAA recommendations- Final Project Operations Plan - RI/FS

Date: 10/19/87

Recommendations Summary:

a) Extent of contamination onsite and offsite needs to be expanded:

1)The number of onsite surface soil samples in the sampling plan should be augmented by 30 samples to more fully characterize on site contamination.

2)Additional surface water and sediment samples (Peach Island Creek and Berry's Creek) taken in depositional areas must be increased: four (4) upstream locations (tidal action), two (2) locations adjacent to the site, and four (4) downstream locations.

B) Methods need augmentation:

3)TOC and grain size should be analyzed in all sediment samples.

4)Total suspended solids should be measured in all surface water samples.

C) Test more than VOC's:

5)Tests should include all listed hazardous substances. Particular emphasis on PCB's and metals detection is needed.

D) Detection limits should be under EPA standards :

6)Acute toxicity values for saltwater aquatic criteria set by the EPA for copper and silver are 2.9 and 2.3 ug/l, respectively; therefore the detection limits should be lowered to less than these values.

Site Description:

Scientific Chemical Processing Site, Carlstadt Township, Bergen County, New Jersey

The Scientific Chemical Processing site (SCP) is located in the Carlstadt Township, Bergen County, New Jersey. The site was used by SCP for the recycling of industrial wastes from 1971 until 1980 at which time it was shut down by court order. Prior to 1971, the site was reportedly used by other companies for solvent refining and recovery since the 1950's.

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While in operation, SCP received liquid wastes (primarily hydrocarbons) from other firms and processed them into marketable products, such as methanol, and resold them. Liquid hydrocarbons were also processed and blended with fuel oil and sold as boiler fuels. In addition, the site received paint sludges and acid wastes. It is unknown to what extent any of these wastes were received, processed or deposited on-site. After operations ceased in 1980, over 300,000 gallons of hazardous materials were stored on the site.

The site occupies a relatively flat, sparesly vegetated area of approximately 5.9 acres. Most operations and suspected illegal disposal occurred in three sections of the site: The Tank Farm, the Still and Boilerhouse, and the Staging platform and thin-film evaporator. The Tank Farm was in a depression and was an unlined containment area which at one time contained 18 tanks, some which were marked as containing PCBs. These tanks are in the process of being removed. However, the structural integrity of the tanks were suspect and leaks have been reported from one or more of the tanks. The Still and Boilerhouse section of the site is unlined and contained tank trailers. These tank trailers were in the same condition as the tanks in the Tank Farm with reported leaks and ground discoloration indicative of past spillage. The staging platform and thin-film evaporator area contained 10 tanks and a trailer tank which were marked as containing PCB's.

There are also other areas on-site in which suspected dumping occurred. These areas include two apparent sludge disposal areas, a few soil and debris mounds, seeps of discolored groundwater discharging into the local stream, and patches of discolored soils at various locations throughout the site.

The site is bordered on its northeast side by Peach Island Creek. Peach Island Creek flows northwest for approximately 600 meters prior to discharging into Berrys Creek. Berry's Creek flows south approximately 4 kilometers before entering the Hackensack River. All of these waterbodies are tidally influenced.

Surface water runnoff and groundwater movement from the site are expected to occur in a northeasterly direction toward Peach Island Creek. Groundwater flow is expected to be in a shallow, unconfined aquifer approximately two meters in depth. At least two groundwater seeps have been observed along the stream bank. A deeper bedrock aquifer is expected to exist approximately 3 to 15 meters in depth.

Comments on the RI/FS Project Operations Plan

Data available in the Project Operations Plan indicate that moderate to high levels of volatile organic compound (VOC) contamination were found in on-site soil samples, low levels of VOC contamination in surface water samples in Peach Island Creek, and moderate levels of VOC's in accumulated sludge on Peach Island Creek ice during the winter. The extent of groundwater or sediment contamination present on or off-site is currently unknown, further, other more toxic contamination has not been analyzed for.

The sampling plan for the RI/FS calls for on-site groundwater wells in both the shallow and bedrock aquifers, groundwater seep samples along Peach Island Creek, soil borings, surface water samples in Peach Island Creek, and sediment samples in the creek. The sampling regime for contaminent analysis as outlined in the Project Operations Plan is summarized below:

Groundwater - On-site only - 10 monitoring wells
- o 7 shallow, 3 deep
  - o 10 samples for round 1
  - o 10 samples for round 2
  - o Priority Pollutant analysis plus MEK, Styrene, M-Xylene, O-Xylene
  - o Petroleum hydrocarbons analysis
- o 2 Groundwater seep sampling locations
  - o 2 samples for round 1
  - o 2 samples for round 2
  - o Priority Pollutant analysis plus MEK, Styrene, M-Xylene, O-Xylene
  - o Petroleum hydrocarbons analysis

Soils - On-site only - 17 sampling locations
- o surficial soils to saturated zone
  - o 57 samples
  - o Priority Pollutant analysis plus MEK, Styrene, M-Xylene, O-Xylene
  - o Petroleum hydrocarbons analysis

Sediment and stream surface water - 4 sampling locations;
1 sample upstream, 3 downstream of site

- o 1 surface water sample per location
- o 4 surface water samples in round 1
- o 4 surface water samples in round 2
- o 2 sediment samples per location: 0-6inches; 12-18inches
  - o 8 sediment samples in round 1
  - o Priority Pollutants analysis plus MEK, Styrene, M-Xylene, O-Xylene
  - o Petroleum hydrocarbons analysis

In addition to chemical analyses, pH, Acidity/alkalinity, and specific conductance will be measured for groundwater and surface water samples.

The number of samples in this sampling plan should be augmented considering the extent of soil stains, debris and disposal areas, reported leaking tanks, and sludges in surface waters found on and off-site. It is recommended that an additional 30 surface soil samples be collected to more fully characterize on-site contamination. It is also recommended that additional surface water and sediment samples be collected in Peach Island Creek. Four sample locations should be located upstream of the site to characterize upstream contaminant movement due to tidal action, two sample locations adjacent the site, and an additional 4 sample locations located downstream of the site to characterize downstream contaminant movement. Samples should be taken in depositional areas, not merely near the streams bank. As in the case of Berrys Creek, flooding may have spread contamination throughout a much larger area. In addition, TOC and grain size should be analyzed in sediment samples and total suspended solids should be measured in surface water samples.

As previously stated, the extent of contamination on or off-site is unknown. The VOC contamination detected in previous sampling efforts does not appear to be a major concern to NOAA resources. The historical information regarding site operations does suggest that high levels of PCBs may have been handled or disposed of on-site. PCBs and any toxic element contamination present on-site or migrating off-site is the primary concern. Considering that sludges have been detected in surface waters of Peach Island Creek, surface water runnoff is likely occurring to the watershed.

The detection limits outlined in the Project Operations Plan are also inadequate for the toxic elements of copper and silver. Proposed detection limits for these elements are 25 and 10ug/l while acute toxicity values for saltwater aquatic criteria are 2.9 and 2.3 ug/l, respectively. Detection limits should be less than the saltwater aquatic criteria for all toxic elements.